

PCT REQUEST

Original (for SUBMISSION)

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| 0 | For receiving Office use only | |
| 0-1 | International Application No. | |
| 0-2 | International Filing Date | |
| 0-3 | Name of receiving Office and "PCT International Application" | |
| 0-4 | Form PCT/RO/101 PCT Request | |
| 0-4-1 | Prepared Using | PCT-SAFE [EASY mode] Version 3.50 (Build 0002.163) |
| 0-5 | Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty | |
| 0-6 | Receiving Office (specified by the applicant) | United States Patent and Trademark Office (USPTO) (RO/US) |
| 0-7 | Applicant's or agent's file reference | 126457.01802 |
| I | Title of Invention | POTTED EXCHANGE DEVICES AND METHODS OF MAKING |
| II | Applicant | |
| II-1 | This person is | applicant only |
| II-2 | Applicant for | all designated States except US |
| II-4 | Name | MYKROLIS CORPORATION |
| II-5 | Address | 129 Concord Road Billerica, MA 01821 United States of America |
| II-6 | State of nationality | US |
| II-7 | State of residence | US |
| II-8 | Telephone No. | (978) 436-6500 |
| II-9 | Facsimile No. | (978) 436-6739 |
| III-1 | Applicant and/or inventor | |
| III-1-1 | This person is | applicant and inventor |
| III-1-2 | Applicant for | US only |
| III-1-4 | Name (LAST, First) | DOH, Cha, P. |
| III-1-5 | Address | 43 Atkinson Lane Sudbury, MA 01776 United States of America |
| III-1-6 | State of nationality | TW |
| III-1-7 | State of residence | US |

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| III-2 | Applicant and/or inventor | |
| III-2-1 | This person is | applicant and inventor |
| III-2-2 | Applicant for | US only |
| III-2-4 | Name (LAST, First) | SMITH, Joseph, E. |
| III-2-5 | Address | 30 Penni Lane N. Andover, MA 01845 United States of America |
| III-2-6 | State of nationality | US |
| III-2-7 | State of residence | US |
| IV-1 | Agent or common representative; or address for correspondence The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: | agent |
| IV-1-1 | Name (LAST, First) | MILLER, Raymond, A. |
| IV-1-2 | Address | Pepper Hamilton LLP One Mellon Center, 50th Floor 500 Grant Street Pittsburgh, 15219 United States of America |
| IV-1-3 | Telephone No. | 412.454.5000 |
| IV-1-4 | Facsimile No. | 412.281.0717 |
| IV-1-5 | e-mail | docketingpgh@pepperlaw.com |
| IV-1-6 | Agent's registration No. | 42,891 |
| V | DESIGNATIONS | |
| V-1 | The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents. | |
| VI-1 | Priority claim of earlier national application | |
| VI-1-1 | Filing date | 22 December 2003 (22.12.2003) |
| VI-1-2 | Number | 60/531,666 |
| VI-1-3 | Country | US |
| VI-2 | Priority claim of earlier national application | |
| VI-2-1 | Filing date | 07 July 2004 (07.07.2004) |
| VI-2-2 | Number | 60/586,363 |
| VI-2-3 | Country | US |

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| VI-3 | Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s): | VI-1, VI-2 | |
| VII-1 | International Searching Authority Chosen | European Patent Office (EPO) (ISA/EP) | |
| VIII | Declarations | Number of declarations | |
| VIII-1 | Declaration as to the identity of the inventor | - | |
| VIII-2 | Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent | 1 | |
| VIII-3 | Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application | 2 | |
| VIII-4 | Declaration of inventorship (only for the purposes of the designation of the United States of America) | - | |
| VIII-5 | Declaration as to non-prejudicial disclosures or exceptions to lack of novelty | - | |

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| VIII-2-1 | Declaration: Entitlement to apply for and be granted a patent Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate: Name (LAST, First) | in relation to this international application MYKROLIS CORPORATION is entitled to apply for and be granted a patent by virtue of the following: |
| VIII-2-1(i v) | | an assignment from DOH, Cha, P. to MYKROLIS CORPORATION, dated 21 December 2004 (21.12.2004) |
| VIII-2-1(i v) | | an assignment from SMITH, Joseph, E. to MYKROLIS CORPORATION, dated 21 December 2004 (21.12.2004) |
| VIII-2-1(i x) | This declaration is made for the purposes of: | all designations except the designation of the United States of America |

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| VIII-3-1 | Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name | in relation to this international application MYKROLIS CORPORATION is entitled to claim priority of earlier application No. 60/531,666 by virtue of the following: |
| VIII-3-1(i v) | | an assignment from DOH, Cha, P. to MYKROLIS CORPORATION, dated 21 December 2004 (21.12.2004) |
| VIII-3-1(i v) | | an assignment from SMITH, Joseph, E. to MYKROLIS CORPORATION, dated 21 December 2004 (21.12.2004) |
| VIII-3-1(i x) | This declaration is made for the purposes of: | all designations |


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| VIII-3-2 | Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name | in relation to this international application MYKROLIS CORPORATION is entitled to claim priority of earlier application No. 60/586,363 by virtue of the following: |
| VIII-3-2(i v) | | an assignment from DOH, Cha, P. to MYKROLIS CORPORATION, dated 21 December 2004 (21.12.2004) |
| VIII-3-2(i v) | | an assignment from SMITH, Joseph, E. to MYKROLIS CORPORATION, dated 21 December 2004 (21.12.2004) |
| VIII-3-2(i x) | This declaration is made for the purposes of: | all designations |

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| IX | Check list | number of sheets | electronic file(s) attached |
|-------|--|--|-----------------------------|
| IX-1 | Request (including declaration sheets) | 7 | ✓ |
| IX-2 | Description | 66 | - |
| IX-3 | Claims | 5 | - |
| IX-4 | Abstract | 1 | ✓ |
| IX-5 | Drawings | 18 | - |
| IX-7 | TOTAL | 97 | |
| | Accompanying Items | paper document(s) attached | electronic file(s) attached |
| IX-8 | Fee calculation sheet | ✓ | - |
| IX-17 | PCT-SAFE physical media | - | ✓ |
| IX-18 | other | Postcard Receipt | |
| IX-18 | other | PCT Transmittal | |
| IX-19 | Figure of the drawings which should accompany the abstract | 1a | |
| IX-20 | Language of filing of the international application | English | |
| X-1 | Signature of applicant, agent or common representative |  | |
| X-1-1 | Name | Raymond A. Miller | |
| X-1-2 | Name of signatory | Attorney | |
| X-1-3 | Capacity | | |

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| 10-1 | Date of actual receipt of the purported international application | |
| 10-2 | Drawings: | |
| 10-2-1 | Received | |
| 10-2-2 | Not received | |
| 10-3 | Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application | |
| 10-4 | Date of timely receipt of the required corrections under PCT Article 11(2) | |
| 10-5 | International Searching Authority | ISA/EP |
| 10-6 | Transmittal of search copy delayed until search fee is paid | |

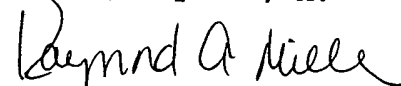
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| 11-1 | Date of receipt of the record copy by the International Bureau | |
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PCT (ANNEX - FEE CALCULATION SHEET)

Original (for SUBMISSION)

(This sheet is not part of and does not count as a sheet of the international application)

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| 0 | For receiving Office use only | |
| 0-1 | International Application No. | |
| 0-2 | Date stamp of the receiving Office | |
| 0-4 | Form PCT/RO/101 (Annex) PCT Fee Calculation Sheet Prepared Using | PCT-SAFE [EASY mode] Version 3.50 (Build 0002.163) |
| 0-9 | Applicant's or agent's file reference | 126457.01802 |
| 2 | Applicant | MYKROLIS CORPORATION |
| 12 | Calculation of prescribed fees | fee amount/multiplier Total amounts (USD) |
| 12-1 | Transmittal fee T | ⇒ 300 |
| 12-2-1 | Search fee S | ⇒ 1920 |
| 12-2-2 | International search to be carried out by | EP |
| 12-3 | International filing fee (first 30 sheets) i1 | 1134 |
| 12-4 | Remaining sheets | 67 |
| 12-5 | Additional amount (X) i2 | 12 |
| 12-6 | Total additional amount | 804 |
| 12-7 | i1 + i2 = i | 1938 |
| 12-12 | EASY Filing reduction R | -81 |
| 12-13 | Total International filing fee (i-R) I | ⇒ 1857 |
| 12-14 | Fee for priority document | |
| | Number of priority documents requested | 2 |
| 12-15 | Fee per document (X) P | 20 |
| 12-16 | Total priority document fee: | ⇒ 40 |
| 12-17 | TOTAL FEES PAYABLE (T+S+I+P) | ⇒ 4117 |
| 12-19 | Mode of payment | cheque |
| 12-20 | Deposit account instructions | |
| | The receiving Office | United States Patent and Trademark Office (USPTO) (RO/US) |
| 12-20-2 | Authorization to charge any deficiency or credit any overpayment in the total fees indicated above | ✓ |
| 12-21 | Deposit account No. | 50-0436 |
| 12-22 | Date | 21 December 2004 (21.12.2004) |
| 12-23 | Name and signature | MILLER, Raymond, A.  |

REMARKS

PCT (ANNEX - FEE CALCULATION SHEET)Original (for **SUBMISSION**)

(This sheet is not part of and does not count as a sheet of the international application)

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|--------|-------------------|---|
| 13-1-1 | Applicant Remarks | Inventor Cha P. Doh is a citizen of Taiwan. I was unable to add this information into the Request Form. |
|--------|-------------------|---|

The present invention relates to potting exchange devices including hollow conductive and or hollow porous membranes wherein the housing includes recessed channels or grooves. The recessed channels or grooves are filled by the potting material during the potting process and form a unitary end structure with the potting material. The grooves or channels formed on the inside of the housing maintains the integrity of the potting with the housing under a wide range of mechanical and thermal conditions.

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|---------|-------------------------------------|---|
| 13-1-1 | Applicant Remarks | Inventor Cha P. Doh is a citizen of Taiwan. I was unable to add this information into the Request Form. |
| 13-2-3 | Validation messages Names | Green? Applicant 2:State of Nationality missing |
| 13-2-6 | Validation messages Declarations | Green? Manually inputted data. Please verify the contents of the information provided. |
| | Validation messages Declarations | Green? Manually inputted data. Please verify the contents of the information provided. |
| | Validation messages Declarations | Green? Manually inputted data. Please verify the contents of the information provided. |
| 13-2-7 | Validation messages Contents | Yellow! The power of attorney or a copy of the general power of attorney will need to be furnished unless all applicants sign the request form. |
| 13-2-8 | Validation messages Fees | Green? Please confirm that fee schedule utilized is the latest available |
| 13-2-10 | Validation messages Annotate | Green? All indications that can be made on the Request form are specifically provided for by the software. Please confirm validity of additional indication. |